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LOYOLA UNIVERSITY OF CHICAGO

ADJUSTMENT OF HEARING-IMPAIRED CHILDREN AND SIBLINGS

A THESIS SUBMITTED TO  
THE FACULTY OF THE GRADUATE SCHOOL  
IN CANDIDACY FOR THE DEGREE OF  
MASTER OF ARTS

DEPARTMENT OF PSYCHOLOGY

BY

KAREN L. BURK

CHICAGO, ILLINOIS

MAY, 1994

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#### DEDICATION

To Pamela Broski for opening my eyes to Deaf culture.

To James Salvucci (1970-1987).

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## CHAPTER I

### INTRODUCTION AND REVIEW OF RELATED LITERATURE

The effects of a physical disability on the adjustment of a child and his or her family members vary greatly. Pediatric psychologists often are asked to evaluate and predict adjustment of young disabled children and their siblings and therefore need more information about the factors that facilitate or impede adjustment in such children. Many researchers have investigated adjustment in disabled children and their nondisabled siblings, but the existing knowledge remains limited in this area. This paper will provide a review of the literature pertaining to adjustment of disabled children and their nondisabled siblings, illustrate the methodological problems of previous research, and report the methods and results of the present project described below.

#### Adjustment of Disabled Children

Many researchers have found that disabled children are at greater risk for developing behavioral and adjustment problems than are healthy children (Breslau, 1985; Meadow, 1984; Meadow & Schlesinger, 1971; Wallander, Varni, Babani, Banis & Wilcox, 1988; Wallander & Varni, 1989; Wallander, Feldman, & Varni, 1989; Watson, Henggeler & Whelan, 1990). Meadow and Schlesinger (1971) studied the prevalence of

emotional and behavioral problems among hearing-impaired students attending a state residential school for the deaf in California. Questionnaires were distributed to the teachers and counselors working at the residential schools, and to teachers and counselors working for the Los Angeles County Schools (a control group). Results indicated that 11.6% of the students enrolled at the state residential school for the deaf were identified as emotionally disturbed, compared to 2.4% of the students in the public schools. An additional 19.6% of the deaf students displayed behavior problems, compared to only 7.3% of the public school students. Meadow and Schlesinger concluded that more than 30% of deaf students at the state residential program exhibit adjustment problems, compared to only 10% of the general school population in Los Angeles County. Noteworthy, however, is that this rate may be inflated for deaf children in general due to the researchers' selection of a residential school (vs. community-living) sample. Other researchers studying spina bifida, cerebral palsy, juvenile diabetes, hemophilia, chronic obesity, juvenile rheumatoid arthritis, and cystic fibrosis (Breslau, 1985; Wallander, Varni, Babani, Banis & Wilcox, 1988; Wallander & Varni, 1989; Wallander, Feldman, & Varni, 1989), have also found that disabled children are at a greater risk for developing behavior problems when compared to healthy controls. Behavior and adjustment have been evaluated with

a variety of parent-report measures (e.g., the Child Behavior Checklist, the Behavior Problem Checklist). While these investigations suggest that children with disabilities are at an increased risk for developing behavioral and adjustment problems, other research has yielded conflicting results.

Some studies have demonstrated no significant difference in the prevalence of behavior or adjustment problems between disabled and nondisabled children (e.g., Arnold & Atkins, 1991; Billings, Moos, Miller & Gottlieb, 1987; Cates, 1991; Drotar, et al., 1981). Cates (1991) studied 68 deaf children from a residential school for the deaf and 68 hearing controls. Subjects completed the Piers-Harris Children's Self-Concept Scale and the Behavioral Academic Self-Esteem questionnaire. Results indicated no significant difference between the groups on overall measures of self-esteem. Other researchers have studied arthritis, rheumatoid disease, and cystic fibrosis (Arnold & Atkins, 1991; Billings, Moos, Miller & Gottlieb, 1987; Drotar, et al., 1981). Behavior and adjustment were measured with various parent-report and self-report measures (e.g., the Health and Daily Living Form, the Piers-Harris Children's Self-Concept Scale). Results of these studies also suggest no significant difference between overall adjustment of disabled and nondisabled children.

Limitations of this body of research must be considered

when interpreting reported results. Primarily, researchers often gather information from one source when assessing adjustment of the children in their studies; the reliability and accuracy of the informant therefore can not be evaluated (Meadow, 1984; Meadow & Schlesinger, 1971; Wallander et al., 1988; Wallander, Feldman & Varni, 1989; Wallander & Varni, 1989). In addition, parents may exaggerate a child's inappropriate behavior due to their own stress (Brody & Forehand, 1986). The designs of the projects conducted by Wallander and his colleagues involved collecting information only through maternal report (Wallander et al., 1988, Wallander, Feldman & Varni, 1989, Wallander & Varni, 1989); results from these researchers' projects should be considered with caution as they may not be valid reflections of the child's actual (objectively assessed) behavior. Methodological designs may be strengthened by collecting information from multiple informants, including parents, teachers, peers, and the children themselves when appropriate. Noteworthy is that in three of the four studies that report no significant difference between disabled and nondisabled children's adjustment, information about subjects' adjustment was gathered from two informants; that is, the child and mother (Billings et al, 1987), the child's teacher and mother (Drotar, et al., 1981), and the child and teacher (Cates, 1991). Sample sizes consisted of 93, 209, and 68 disabled children, respectively, and only

two measures were used per study; it appears as though these studies had sufficient power to detect any true differences in adjustment. This suggests that the literature might yield more consistent results if all researchers routinely collect information about subject adjustment from more than one informant per child.

The composition of the samples and control groups employed is another limitation of this research. For instance, in some samples, families with a low socioeconomic status (SES) were over-represented (Wallander et al., 1988; Wallander & Varni, 1989), while other samples included only children in special settings (e.g., residential schools; Meadow & Schlesinger, 1971). Such characteristics limit generalizability of conclusions. The studies conducted by Wallander and his colleagues lack a control group (Wallander et al., 1988; Wallander, Feldman, & Varni, 1989; Wallander & Varni, 1989). These researchers compared subjects' scores on the Child Behavior Checklist to the normative data of the measure. This type of comparison tends to exaggerate findings, resulting in a greater effect size than would emerge in a comparison study with matched controls (Lavigne & Faier-Routman, 1992).

In other studies, investigators did not match subjects in the comparison group to those in the disability group (Breslau, 1985; Cates, 1991; Meadow, 1984; Watson, Henggeler, & Whelan, 1990). One can not be certain that

reported differences are due only to the presence or absence of a disability when other subject characteristics are not controlled (e.g., IQ, SES, age, gender).

Researchers have studied many different conditions referring to them generally as "disabilities." Among those included are sensory, physical, and mental impairments, and chronic illnesses (e.g., cystic fibrosis). This has impeded the understanding of the literature as a whole, because findings from studies of one disability may not generalize to other conditions, yet it is unclear to what extent findings do generalize successfully. No theoretical model currently exists that would allow one to accurately predict the different effects of specific disabilities. Researchers combine different disabilities into one group for analysis, and due to our limited knowledge of the effects of different disabilities, it is difficult to ascertain whether this is an acceptable procedure.

The variety of measures that have been used to assess adjustment presents another limitation of this research. Findings of a study may be an artifact of the measure being used. Differences in the operational definitions used to measure a specific construct (i.e., adjustment), result in considerable variation in the content of the measures. Different measures of adjustment may, in fact, be tapping distinct constructs. Arnold and Atkins (1991) reported this phenomenon in a study of 23 hearing-impaired children and 23

hearing controls matched on gender. These researchers used the Bristol Social Adjustment Guide and Rutter's Children's Behavior Questionnaire to assess the adjustment of their subjects. Results from the Bristol measure indicated high levels of maladjustment in both groups, with 43.5% of the hearing-impaired children appearing maladjusted and 30.4% of the controls. In contrast, the Rutter questionnaire identified no maladjusted children in either group. This study demonstrates the need for caution when attempting to generalize results of a study, and the need for one to note the measure and operational definition of adjustment employed. Another problem regarding adjustment measures is the use of measures to assess adjustment of disabled children without previously analyzing the reliability and validity of those measures with this population. Reliability and validity may vary across measures when used with disabled children, and few measures have been standardized on this population despite their wide use.

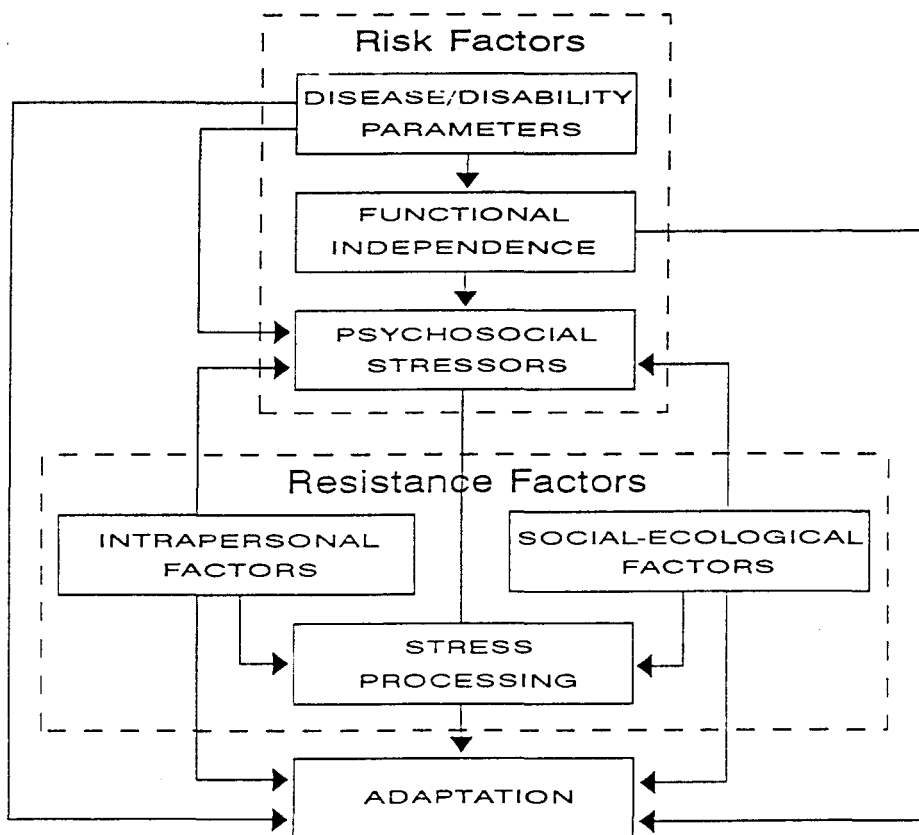
In summary, review of the literature demonstrates that conflicting results are reported regarding the adjustment of disabled children, with some researchers suggesting that disabled children have many more behavioral and adjustment problems than healthy children and others reporting no significant differences between the groups. While these conflicting results may stem from methodological flaws in some cases, it is likely that there are true differences in

adjustment of children and families related to characteristics such as the severity of illness, other stressors in a child's life, and resources available to the child and family.

Wallander and his associates proposed a model to identify and explain true sources of variance that might yield conflicting research results (Wallander, Varni, Babani, Banis & Wilcox, 1989). Their model (Figure 1) includes risk and resistance factors that interact with the direct effects of a disability to either facilitate or impede adjustment. Among the risk factors they list are disease or disability parameters, functional independence of the disabled person, and psychosocial stressors. The category of disease or disability parameters includes dimensions such as the severity of the disability, its noticeability, and the degree of brain involvement. "Psychosocial stressors" pertains to events such as disability-related problems and daily annoyances. Among the resistance factors Wallander and his associates discuss, are intrapersonal factors such as temperament and problem solving ability; social-ecological factors such as social support and family environment; and stress processing or coping methods utilized by an individual. The purpose of this project was to elaborate the Wallander et al., risk and resistance model by investigating the relationship between a



Figure 1. Wallander and Varni model predicting adjustment in disabled and chronically ill children.



disabled child and his or her nondisabled sibling, a hitherto unexplored component of the social-ecological resistance factor.

### Effects of Siblings on Adjustment

Research investigating the relationship between two healthy siblings indicates that there is a link between the behavior of a child and that of his or her sibling (Dunn, 1983; Dunn & Munn, 1986; Dunn, 1988). Dunn and Munn (1986) studied the development of prosocial behavior (e.g., comforting, giving/showing) in children when they were 18 and 24 months old (a longitudinal design). These researchers reported that those children growing up with an older sibling who usually interacted with them in a cooperative manner became more cooperative themselves over time, compared to children growing up with an older sibling who was not cooperative. Dunn and Munn were unable to argue that sibling behavior has a causal influence on the development of prosocial behavior, because of the correlational design of their study. However, other researchers posit that the sibling relationship does have an apparent causal role in the development of aggressive behavior in children (Brody, Stoneman & Burke, 1987; Patterson, 1984). Evidence from the literature on healthy siblings suggests that the sibling relationship is an important aspect of the social-ecological component of the Wallander, et al., model, but as of yet, little has been

done to investigate relationships of disabled children and their nondisabled siblings.

### Sibling Relationships and Disabled Children

The sibling relationship between a disabled and nondisabled child is a special dyad that deserves considerable attention, since the research regarding sibling relationships between two healthy children may not generalize well to the disabled-nondisabled child dyad. Most of the literature studying the relationship between a disabled child and his/her nondisabled sibling investigates the effect of the presence of a disabled child on the adjustment of his/her nondisabled siblings. A review of the literature indicates that siblings of disabled children do not differ from siblings of nondisabled children on "global adjustment" measures (Breslau, Weitzman, & Messenger, 1981; Breslau & Prabucki, 1987; Dyson, 1989; Lobato, Barbour, Hall, & Miller, 1987). However, siblings of disabled children exhibit more externalizing behavior problems than do siblings of nondisabled children (Breslau, et al., 1981; Ferrari, 1984; Lobato et al., 1987), and they engage in relatively fewer social activities (Dyson, 1989; Ferrari, 1984). An interaction between birth order and gender effects influences the adjustment of siblings of disabled children. Younger males, particularly those close in age to their disabled sibling, tend to be less well adjusted than those older than and/or not close in age to

the disabled child. Females younger than their disabled sibling tend to be better adjusted than those who are older (Breslau, et al., 1981). The effects of a disabled child on his/her nondisabled sibling become more pronounced over time (Breslau, et al., 1987; Dyson, 1989). This may be explained as a result of increased isolation of the family as a whole from the community, due to the duration of the child's exposure to his/her disabled sibling and problems that arise in the family, or due to developmental differences in the child's perception, comprehension, and acceptance of the disabled sibling.

Limitations of the literature on the adjustment of disabled children, including limited or no matching of the control group to the targets (Ferrari, 1984; Breslau et al., 1987), lack of a control group (Breslau et al., 1981), gathering information from only one source (Lobato et al., 1987) and questionable validity and reliability of the measures used in the study (Breslau et al., 1981; Breslau et al., 1987; Lobato et al., 1987) emerge in this literature as well. The effects of these limitations on one's understanding of the literature parallel those discussed in the context of the literature on the adjustment of disabled children.

While the majority of researchers have studied only the effect a disabled child has on the adjustment of his or her siblings, a few researchers have examined the effect of a

disability on the dynamics of the relationship between brothers and sisters. McHale and Gamble (1989) investigated the activities in which siblings engage when one child is disabled (e.g., amount of caregiving, amount of time spent together); the psychological well-being of siblings of disabled children; and family processes that may affect the children's well-being (e.g., sibling conflict, mother-child conflict). Thirty-one older siblings of mentally retarded children (who attended programs for educable, trainable, and severely/profoundly retarded children) and 31 controls matched on family size, family income, and gender and age of older and younger siblings were studied. These researchers employed a rigorous protocol, collecting information through home interviews with the mothers and targets, daily telephone interviews with mothers and targets, the Harter's Perceived Competence Scale, the Children's Depression Inventory, the Revised Children's Manifest Anxiety Scale, the Sibling Inventory of Behavior, the Conners' Parent Rating Scale, and the Adaptive Behavior Scale. Results demonstrate that siblings of nondisabled children and those of disabled children spend approximately the same amount of time in sibling activities (e.g., eating or playing together), although children with disabled siblings seem to spend more time in caregiving activities (e.g., bathing, teaching, or babysitting sibling). No difference emerged in the children's reports of positive and negative sibling

interactions. Adjustment in siblings of disabled children was negatively correlated with amount of caregiving the sibling provided for his/her disabled brother or sister, feelings of sibling and maternal negativity, and the child's dissatisfaction with his or her parents' differential treatment between the children. Some caution should be used when interpreting these results, due to the wide age range of children involved in the study (8-14) and the inclusion of siblings of children with a variety of disabilities (e.g., spina bifida, Down's Syndrome, cerebral palsy) and varying degrees of mental retardation.

Schwirian (1976) studied the behavior patterns of older siblings of hearing-impaired preschoolers. Twenty-nine families of hearing-impaired children and 28 randomly selected control families participated in the study. Information was collected on 77 siblings in the families of hearing-impaired children and 80 siblings in the control families. Results indicated that older siblings of hearing-impaired children did not differ from controls in extent of child care responsibilities, general home responsibilities, social activity level, or degree of independence. Instead, age and sex of the children accounted for most of the variance in the children's behavior. Data was gathered from more than one sibling per family, a procedure that artificially inflates the power of this study. Also, the control group was not matched to the disability group;

groups differed significantly on parents' marital status, parents' ages, parents' levels of education, fathers' occupations, and family's SES.

Overall, review of the literature on the adjustment of disabled children reveals that these children may be at risk for developing behavioral and adjustment problems. Likewise, siblings of disabled children may also be at risk for developing externalizing behavior problems in particular, specifically younger brothers and older sisters of disabled children. Many limitations of this literature preclude definitive conclusion of results. These include the use of only one informant per child, lack of control groups matched to disability groups for comparison purposes, wide diversity of illnesses and impairments referred to generally as "disabilities", and questionable validity and reliability of measures used with disabled children. Further research is needed to identify variables that are validly related to adjustment in disabled children and their siblings.

## CHAPTER II

### THESIS OVERVIEW AND OBJECTIVES

The purpose of the present project was to study perceptions of the sibling relationship of hearing-impaired children and their normally-hearing siblings, and to determine whether there is a relationship between the children's perceptions of their sibling relationships and their adjustment. Hearing-impairment was chosen as the focus for this study, because it is a unique disability that may make communication between the hearing-impaired individual and other family members somewhat challenging. Effectiveness of interpersonal communication within the family might vary, depending on the degree of an individual's hearing loss and the commitment of that hearing-impaired person and family members to communicate with one another. The focus of the present study was on the relationship that hearing-impaired children have with their normally-hearing siblings.

The objectives of the study were to investigate the following questions:

(1a/b) Is severity of hearing-impairment associated with children's perceptions of the quality of the sibling relationship between the hearing-impaired child and a



normally-hearing sibling?

(2) Is the effectiveness of communication between siblings associated with their perceptions of their relationship?

(3) Is effectiveness of communication between siblings related to the children's adjustment?

(4a) Is a hearing-impaired child's perception of his/her relationship with a normally-hearing sibling associated with that hearing-impaired child's adjustment?

(4b) Is a normally-hearing child's perception of a relationship with a hearing-impaired sibling associated with that normally-hearing child's adjustment?

(5a/b) How well do decibel loss, communicative effectiveness, and perceptions of the sibling relationship predict a child's adjustment?

The methodological design of the present project improved upon two of the limitations of the existing literature that were discussed above. First, the disability studied was limited to hearing-impairment, and children with multiple disabilities were excluded. Second, a measure of adjustment (Child Behavior Checklist) that has demonstrated reliability with the population being studied was included in the protocol.

## CHAPTER III

### METHOD

#### Participants

Fifteen families participated in this study (12 Caucasian, 3 African-American). Of 15 hearing-impaired children (7 F, 8 M; ages 5-12,  $M=9$ ,  $SD=2$ ), 4 had a moderate hearing loss, 3 a severe loss, and 8 a profound loss. Level of hearing loss was assessed by averaging a child's pure-tone-average decibel loss in his/her better ear at 500, 1000, and 2000 Hertz. Eight parents did not know the cause of their children's deafness, 4 reported that it was caused by meningitis, 3 by complications of a premature birth, and 1 by genetics. Hearing-impaired children had no other impairments (i.e., physical or mental). Hearing siblings participating in this study (10 F, 5 M) ranged in age from 4.5 to 12 ( $M=8$ ,  $SD=2$ ), and had no physical or mental impairments.

#### Materials

The Achenbach Child Behavior Checklist-Parent Report Form (CBCL-PR) (See Appendix A; Edelbrock & Achenbach, 1984) was used to assess internalizing and externalizing behavior problems as indicated by a child's mother. Mothers completed the CBCL-PR two times, once for each child. Test-

retest reliability and discriminative validity have been well documented for non-disabled children (Achenbach, 1978; Achenbach & Edelbrock, 1979). This measure has been used frequently with disabled populations (e.g., Wallander et al., 1988; Dyson, 1989). Norms are available for (non-disabled) children from 4 to 18 years of age (Achenbach, 1991a).

A modified version of the Sibling Relationship Questionnaire - Self Report (SRQ) (see Appendix A; Furman & Buhrmester, 1985) was used to assess each child's (i.e., index, sibling) perception of the quality of the relationship with his/her sibling. Modification of the SRQ included use of synonyms for words considered difficult for 5-year-olds to comprehend, addition of training questions to teach children how to complete the task, and use of poster boards to provide a visual stimulus from which the children were able to choose their responses.

Two poster boards were designed for this study. The first displayed five circles that grew progressively in size to correspond with the response set of the SRQ that ranges from "hardly at all" to "extremely much." Each circle was labelled with its respective response (i.e., "hardly at all," "not too much," "somewhat," "very much," "extremely much"). The second poster board contained pockets in which children placed pictures that they had drawn of themselves and of their siblings. Directed towards each picture were

hands with an index finger pointed towards the picture. A small hand was labelled "often" and a larger hand was labelled "almost always." In the center of the poster board were two hands joining, forming the sign for "same," and labelled "the same." These symbols were used for the SRQ response set that includes, "My sibling is treated better almost all of the time," "My sibling is treated better often," "We are treated about the same," "I am treated better often," and "I am treated better almost always." Thus, for example, if a child wished to say that his/her sibling was treated better all the time, then he/she would point to the large hand pointing to his/her drawing of the sibling .

Children were interviewed individually to complete their questionnaires. This was done to ensure that young children and hearing-impaired children, in particular, understood all of the questions. Internal consistency and test-retest reliability of the scale have been documented (Furman and Buhrmester, 1985), and this measure has been used in studies with disabled and chronically ill children (Begun, 1989; Hanson, et al., 1992). Analysis for this study used only the warmth/closeness factor score (e.g., intimacy, companionship). Items on this factor are indicated by a \* on the questionnaire in Appendix A.

Pictorial stimuli from the Elaborated Sentences subtest of the Test of Auditory Comprehension of Language (TACL)

(Carrow-Woolfolk, 1985) were used to assess communication between siblings. Subjects were presented with three stimuli that differed slightly, one of which was designated as the "target picture." The task was for a child to describe to his or her brother or sister the target picture so that the sibling could point to the target and not to either of the two incorrect foils. The purpose of this task was to determine whether the children were able to communicate well enough for their brothers or sisters to correctly identify the target pictures.

Each hearing-impaired child described a set of pictures to his/her sibling, and each sibling described a set of pictures to the hearing-impaired subjects. Children describing the pictures to their siblings continued doing so until their sibling made three consecutive errors in selecting the target picture. If three consecutive errors were not made, each child described a total of 20 pictures to their brother or sister.

The TACL stimuli are arranged in order of difficulty, beginning at a relatively easy level and progressively becoming more challenging. Stimuli were divided in half a priori by even and odd numbers, so that each child received the same number of stimuli at approximately the same level of difficulty. Half of the hearing-impaired children were asked to describe the odd stimuli to their siblings and half described the even stimuli. This was done to ensure

equivalent difficulty of stimuli presented to hearing-impaired children and their siblings. Children were able to use the communication modality they preferred (e.g., sign, speech, mime).

### Procedure

Parents of hearing-impaired children between the ages of 5.0 and 12.0, who have an unaided three-pure-tone average (500, 1000, 2000, Hertz) hearing loss at or above 40 decibels in the better ear, were contacted by the primary investigator. Subjects were recruited from a suburban special education consortium and an urban pediatric hospital.

Subjects recruited from the special education consortium were sent a letter from the primary investigator and the coordinator of the Regional Hearing-Impaired Program. Envelopes were addressed and sent by the coordinator of the program in order to maintain confidentiality of potential subjects. Those interested in the study returned a postcard to the primary investigator, and were subsequently telephoned to explain the inclusion criteria, which were: (a) sibling between 4.5 and 12.0 who had normal hearing; b) no physical or mental impairment other than hearing-impairment; (c) an unaided three-pure-tone average hearing loss greater than or equal to 40 decibels in the better ear. The purpose and procedures of the study were explained to those who met the criteria,

verbal consent was obtained, and an appointment was arranged to meet with the mother and children. Fifty letters were sent to potential subjects, and five families (10%) responded with interest in the project. Of these five, only three families met criterion, and due to scheduling problems one family was unable to participate in the project.

Children between the ages of 5.0 and 12.0, who have an unaided three-pure-tone average hearing loss of 40 decibels or greater and were being followed in the audiology department of the urban pediatric hospital mentioned above were identified through the use of department records. Parents of potential subjects were contacted by telephone to recruit them for the study and explain the aforementioned inclusion criteria.

Letters were sent to parents who indicated interest in participating in the project 1-2 weeks before their appointments to confirm their scheduled meeting time. A consent form was also sent so that they were able to review it before their appointment to ensure that they were still interested in the project, and a demographics questionnaire was sent for them to work on at home so that they would have the ability to check for information at home if needed (e.g., teacher's address, date of diagnosis of deafness).

Interviews were conducted either at Loyola University, Children's Memorial Hospital, or at subjects' homes. Sibling's interviews were conducted simultaneously by the

primary investigator and a trained research assistant, while mothers worked independently on questionnaires about their family. The primary investigator conducted all interviews with the hearing-impaired children. All of these interviews were videotaped so that if the primary investigator did not understand what a subject was communicating, the videotape could have been transcribed at a later date to ensure accurate comprehension (a procedure which was not necessary for this project). One of six research assistants interviewed the normally-hearing sibling. The children's interviews consisted of completing the Sibling Relationship Questionnaire and the picture description and identification task. The mother's time was spent completing a CBCL for each child. Families were paid \$30.00 at the end of their appointments to compensate them for their time, effort, and any travel expenses incurred.

Because this is a special population that is difficult to recruit, the mothers also completed the Multidimensional Scale of Perceived Social Support, Dyadic Adjustment Scale, Coddington Life Events Checklist, and Moos Family Environment Scale as part of a larger study. Information from these questionnaires was not analyzed as part of the present project.



## CHAPTER IV

### RESULTS

#### Normalizing the data

Before beginning analyses, the scatterplots for each variable were examined. Four outliers were found in the data collected on communication ability, two of which were scores of the hearing-impaired (HI) children, and two that were scores of siblings (SIBs). These outliers were removed for analyses.

#### Distribution of the data

In order to examine the distribution of the data for each of the variables in this study, the range, mean, and standard deviation for each variable was calculated (see Table 1). Noteworthy is the limited range of the data from the communication task that resulted after two outliers per group (i.e., HI and SIBs) were removed for analyses. Both groups of children performed similarly on this communication task.

#### Severity of Hearing-Impairment and Perceptions of Sibling Relationship (Hypothesis 1)

To investigate whether the severity of hearing-impairment was associated with children's perceptions of the quality of their relationship with their sibling, two

Table 1

Means, SDs, and Ranges for SRQ Warmth, Communication task, and Externalizing Behavior.

Variable	HI Children		SIBs	
SRQ Warmth		25.0 (5.0)		24.2 (5.3)
	range:	(18 - 36)		(13 - 31)
Comprehension Score		18 (2.0)		19 (1.4)
		(15 - 20)		(16 - 20)
Externalizing Behavior (T-score)		54.2 (7.8)		46.9 (9.2)
		(37 - 62)		(31 - 63)

correlations were computed. Severity of hearing impairment (decibel loss) was correlated first with HI children's perceptions of warmth in their relationships with their SIBs, and second with SIBs perceptions of warmth in thier relationships with HI children. It was hypothesized a priori that as hearing ability decreased (i.e., decibel loss increased), sibling warmth would also decrease. However, results were not significant for either computation (see Table 2). Contrary to the a priori hypothesis, a trend ( $p=.09$ ) was found towards a positive correlation between decibel loss and HI children's perceptions of warmth in their relationships with their SIBs.

Communication Effectiveness and Perceptions of Sibling Relationship (Hypothesis 2)

To investigate whether the effectiveness of communication between siblings is associated with their

Table 2

Relationship between Hearing Loss (dB) and Sibling Warmth.

	Perceptions of Warmth	
	HI Children	SIBs
Decibel Loss	.37 (p=.09)	.06 (p=.42)

perceptions of their relationship, two correlations were computed. First, HI children's perceptions of warmth in their sibling relationships were correlated with the number of pictures accurately identified by their SIBs in the communication task. Second, correlations of SIBs' perceptions of warmth in their relationships with HI children's picture identification accuracy scores were computed. It was hypothesized a priori that as communicative ability increased, sibling warmth would also increase. This hypothesis was partially supported. A significant positive association was found between HI children's abilities to understand their SIBs and SIBs' perceptions of warmth in the relationship. No significant results were found regarding the relationship between HI children's perceptions of warmth in their sibling relationships and the number of pictures accurately identified by SIBs (see Table 3).

Relationship between Adjustment and Sibling Communication  
(Hypothesis 3).

Table 3

Relationship between Sibling Communication and Sibling Warmth.

	Perceptions of Warmth	
	HI children	SIBs
<hr/>		
Comprehension Score		
HI	---	.65 (p=.01)
SIBs	.37 (p=.11)	---
<hr/>		

To investigate the relationship between a child's adjustment and the comprehension ability of his/her sibling, two correlations were computed. HI children's externalizing behavior scores (T-scores) were correlated with their hearing SIBs' comprehension scores on the communication task. Similarly, SIBs' externalizing behavior scores were correlated with the comprehension scores attained by HI children. It was hypothesized a priori that as comprehension scores increased for a child, the externalizing behavior of that child's sibling would decrease. This hypothesis was partially supported. A significant negative relationship was found between a HI child's ability to understand his/her SIB and that SIB's adjustment. However, the correlation between HI children's adjustment and their SIBs' understanding of them was not significant (see Table 4).

Table 4

Relationship between Adjustment and Communication Effectiveness.

	Comprehension Score	
	HI children	SIBs
<hr/> Externalizing Behavior <hr/>		
HI children	---	-.24 (p=.22)
SIBs	-.47 (p=.05)	---

-----  
Perceptions of Sibling Relationship and Adjustment  
(Hypothesis 4)

To investigate whether a HI child's perception of his/her relationship with a SIB is associated with that HI child's adjustment, HI children's externalizing behavior problems (T-scores) were correlated with their perceptions of warmth in their relationships with their SIBs. Likewise, to investigate whether a SIB's perception of a sibling relationship with a HI child is associated with that SIB's adjustment, SIBs' externalizing behavior problems (T-scores) were correlated with their perceptions of warmth in their relationships with their HI brothers and sisters. It was hypothesized a priori that the more aggressive a child (i.e., higher externalizing T-score), the less intimate he/she would feel with a sibling. This hypothesis was not supported (see Table 5).

Table 5

Relationship between Sibling Warmth and Adjustment.

	Perceptions of Warmth	
	HI children	SIBs
<u>Externalizing Behavior</u>		
HI children	.18 (p=.27)	
SIBs		-.01 (p=.48)

Predictors of Adjustment

To determine how well decibel loss, communication effectiveness, and perceptions of the sibling relationship predict a child's adjustment, two multiple regression analyses were computed. Neither analysis revealed significant multivariate effects (see Tables 6 and 7).

Table 6

Regression of Hearing Loss (dB), CommunicationEffectiveness, and SRQ Warmth on HI Externalizing Behaviors.

Step and Variable	<u>df</u>	Multiple <u>R</u>	<u>R</u> <sup>2</sup>	Change in <u>R</u> <sup>2</sup>	<u>p</u> of change
(1) dB loss	1,11	.207	.043	.043	.50
(2) Communi- cation	2,10	.383	.147	.104	.30
(3) SRQ Warmth	3,9	.408	.167	.020	.65

Table 7

Regression of Hearing Loss (dB), Communication Effectiveness, and SRQ Warmth on SIB Externalizing Behaviors.

Step and Variable	<u>df</u>	Multiple <u>R</u>	<u>R</u> <sup>2</sup>	Change in <u>R</u> <sup>2</sup>	<u>p</u> of change
(1) dB loss	1,11	.019	.000	.000	.95
(2) Communi- cation	2,10	.471	.222	.222	.12
(3) SRQ Warmth	3,9	.482	.233	.011	.73

## CHAPTER V

### DISCUSSION

As discussed above, the literature on the adjustment of disabled children provides conflicting evidence concerning whether children with disabilities differ from nondisabled children on measures of adjustment. Some researchers have concluded that no differences emerge when comparing the adjustment of disabled children to that of their nondisabled peers (e.g., Arnold & Atkins, 1991; Cates, 1991), whereas other researchers have found that disabled children are at greater risk for developing behavioral and adjustment problems (e.g., Meadow, 1984; Wallander & Varni, 1989) than are nondisabled children. Results from the present study support the conclusions of the former; that is, hearing-impaired subjects scored within the normal range on a measure of externalizing behavior. Although there may be a statistically significant difference between the mean externalizing behavior score for hearing-impaired children and the mean for the normative group, this difference is not clinically significant since the mean for the hearing-impaired children is still within normal limits. Davis, Elfenbein, Schum, and Bentler (1986) report a statistically significant difference between the mean externalizing



behavior score for their hearing-impaired sample and that of the normative group used for the measure (CBCL). However, inspection of the mean of the researchers' sample indicates that it falls within the normal range of adjustment, and that the slight difference in behavior problems for the hearing-impaired sample versus that of published norms is not clinically significant.

Interestingly, as noted in the literature reviewed above, researchers who have reported no differences in adjustment between disabled and nondisabled children typically use two informants to gather data about subjects' adjustment. However, the current project incorporated only data from a single informant (i.e., a child's mother). Hearing-impaired children may have scored in the normal range on the adjustment measure in this study and not in others employing single informants (e.g., Meadow, 1984; Wallander, Feldman, & Varni, 1989) because children in the present sample all live with their families rather than being enrolled in residential schools, and the disability studied was limited only to hearing-impairment (vs. including other disabilities and grouping them together as a large heterogeneous sample). This careful sampling procedure may have helped reduce some of the "noise" leading to the conclusion that disabled children are less well adjusted than are nondisabled children.

The literature on the adjustment of siblings of

disabled children suggests that these children do not differ from controls on global measures of adjustment (e.g., Breslau, Weitzman, & Messenger, 1981; Dyson, 1989), but display more externalizing behaviors (e.g., Ferrari, 1984; Lobato et al., 1987). However, siblings of hearing-impaired children in the present study scored within the normal range on a measure of externalizing behavior. In fact, their T-scores were lower than might be expected ( $M=46$ ), although still falling in the normal range. Each mother completed a behavior checklist for each of her two children participating in this study. Low scores for the siblings may have resulted from mothers comparing their hearing children's behavior to their hearing-impaired children's behavior, which may have deflated the hearing children's scores. In order to correct for this problem and strengthen the methodological design of the study, it is necessary to get an independent measure of adjustment on each individual in a sibling dyad. Thus, attempts are being made to gather information about the children's adjustment from their teachers (i.e., independent raters); this data will be used for future research being conducted by the author on the adjustment of hearing-impaired children and their siblings.

Also cited in the literature reviewed above is the notion that a child's behavior has an influence on that of a sibling (e.g., Dunn & Munn, 1986). Although not directly studied in the current project, this relationship was

investigated by regressing the association between children's perceptions of the warmth in their sibling relationship onto the children's adjustment. Specifically, it was hypothesized that children's perceptions of warmth in their sibling relationships would add to the amount of variance accounted for in children's externalizing behaviors by the hearing-impaired children's decibel loss, and sibling communicative effectiveness. This hypothesis was not supported by the data. Although it might indeed be the case that information about perceived warmth in the sibling relationship of a hearing-impaired child and a hearing brother or sister adds to the ability to predict adjustment in these children (over predictions based on decibel loss and communication effectiveness alone), the relationship may not have been demonstrated in this study could be due to the definition of adjustment used in the study (i.e., externalizing behavior problems), or to insufficient power (small sample size).

The lack of a significant association between children's perceptions of warmth in their sibling relationships and their adjustment is similar to the conclusions drawn by Hanson et al. (1992) in their study of sibling relationships of children with Diabetes Mellitus. These authors also reported that children's perceptions of warmth in their sibling relationships (as measured by the Sibling Relationship Questionnaire) were not predictive of

the children's externalizing behavior. This finding seems to hold true for hearing-impaired children and their normally-hearing siblings as well. However, Hanson and her colleagues found a significant positive correlation between children's perceptions of warmth in their sibling relationships and their self-esteem. This relationship therefore may warrant investigation in hearing-impaired children and their brothers and sisters.

The influence of children's behaviors on a sibling's behavior was also measured indirectly by investigating the relationship between communicative effectiveness in the sibling dyad and children's adjustment. It was hypothesized that as comprehension scores increased for a child, the externalizing behavior (a measure of child maladjustment) of that child's sibling would decrease. This hypothesis was supported for the hearing siblings in this study. That is, a significant negative relationship was found between a hearing-impaired child's ability to understand his/her sibling and that sibling's adjustment. However, the correlation between hearing-impaired children's adjustment and their siblings' ability to understand them was not significant. Perhaps hearing children who are always "on the go," and who tend to be more aggressive do not have the patience to learn their hearing-impaired sibling's language (e.g., sign language), or are unable to stand facing their hearing-impaired sibling so that they can be lipread more

easily. The relationship between these variables may not be significant for hearing-impaired children, because they know that in order to get along in a hearing society, they need to work on communicating with others regardless of their abilities to control their "acting out" behaviors. If they value communication with hearing people, they may work on controlling their behavior when communication is necessary. This relationship also may not have been significant due to other important factors in predicting adjustment in hearing-impaired children, such as associated neurological problems, educational placement of the child, or stigma of deafness. The restricted range of the data on communication effectiveness must also be acknowledged; no definitive results concerning the relationship between adjustment and communication may be concluded.

Results from the present project concerning the influence of a child's behavior on that of his/her sibling's indicates that the operational definition of "behavior" must not be taken for granted, but instead must be clearly specified. As demonstrated in this study, results may vary as a function of the definition employed (e.g., communication, perceptions of sibship). Further research is needed to determine if sibling relationships are important predictors of adjustment in families with disabled children and should therefore be added to models that predict adjustment in this population.

Another hypothesis of the present study was that as a child's hearing ability decreases, perceptions of warmth in the sibling relationship also decrease. This hypothesis was not supported by the data. In fact a trend was found in the opposite direction. That is, the more severe a child's hearing loss, the more positive were that child's perceptions of warmth in the sibling relationship. This finding may be interpreted using the notion of marginality (e.g., Pless & Pinkerton, 1975), which suggests that children who have less severe or less visible disabilities have more difficulty getting along with their healthy peers than do those with more severe disabilities. In the present study, a low decibel loss may be equated with a low visible disability (i.e., most children with a low level hearing loss are likely to use speech), while a severe loss may be considered a highly visible disability (i.e., children are likely to use sign language). Because results of the present project indicated that the worse a child's hearing, the warmer he/she felt to a sibling, it may be that the more deaf a child, the better he/she is accepted by a normally-hearing sibling since the hearing-impaired child's disability is likely to be highly visible. This might be the case because normally-hearing siblings of children with severe hearing losses may be better able to understand why their parents give their deaf siblings so much attention, for example. This hypothesis could be explored in future

research by examining data from the rivalry scale of the Sibling Relationship Questionnaire, and the relationship of scores on this scale to the degree of a child's hearing loss.

Alternatively, there might be moderating variables that affect the relationship between level of deafness and the sibling relationship. For instance, deafness, per se, may not directly influence a relationship with one's sibling, but how well each person communicates with the other may be an important factor or buffer. This particular hypothesis of the buffering effect of sibling communication could not be tested in the present study due to the limitations posed by the small sample size, but this hypothesis warrants future consideration, particularly due to the findings concerning the second hypothesis of the study.

It was expected that as communicative ability between siblings increased, perceptions of warmth in the sibling relationship would also increase. This hypothesis was partially supported. That is, as the hearing-impaired children's abilities to understand their siblings increased (as demonstrated by their selection of correct "target pictures" in the communication task), the siblings' perceptions of warmth in their relationships also increased. It seemed that it was important to siblings that their hearing-impaired brothers and sisters understand them in order for them to feel that they have a close relationship

with one another. This may be true because children who can communicate with one another are more likely to share secrets with each other, or, alternatively, because siblings who feel close make an extra effort to learn the other's language (e.g., sign language). However, effective communicative ability does not seem to be related to a hearing-impaired child's perceptions of intimacy in the sibling relationship. This may be a result of a hearing-impaired child's familiarity with the feeling of not being understood by many people in the environment; a hearing-impaired child may not expect anything different from a sibling. However, another possible explanation for the absence of a relationship between communicative effectiveness and hearing-impaired children's perceptions of warmth in their sibling relationships may be the restricted range of the siblings' comprehension scores. A lack of variability in these data may have precluded finding a correlation between the communication variable and hearing-impaired children's perceptions of warmth in the sibling relationship.

Another hypothesis of this study was that the more aggressive a child (i.e., higher externalizing T-score), the less intimate he/she would feel with a sibling. This hypothesis was not supported by the data. The lack of a relationship between these variables may be due to the significance of other important relationships (e.g., with



parents, peers) in the children's lives that account for more of the variance in the children's adjustment.

There were several limitations of this study that must be noted when considering the findings reported above. Primarily, the sample size was small. This resulted in low power for the study, which may have led to results that were not significant. Thus, with a larger sample size more significant results may have emerged from the data. Furthermore, due to the outliers present in the data on communication ability, two subjects from each group (i.e., hearing-impaired, sibling) were dropped for analyses, bringing the sample size to 13 per group for this variable. It is possible that with a larger sample these outliers would no longer be outliers, and that there would be more variability among subjects. This, in turn, might fill the gap between the scores of most subjects in this study and the subjects who were outliers.

A second limitation of this study was the inclusion of siblings who were either older or younger than their hearing-impaired brothers and sisters. When this project was initiated, one of the inclusion criterion was that the hearing-impaired child had to have a younger, hearing sibling. This procedure was implemented due to findings cited in the existing literature that indicated a stronger impact of a child's disability on a younger sibling versus on an older sibling (Breslau & Prabucki, 1987). However,

after a few months of subject recruitment, this investigator learned that it was difficult to find families who had another child soon after their hearing-impaired child. Therefore, in order to complete this project, the criterion was extended to include older, hearing siblings as well.

Another limitation of this study was the use of a single informant (i.e., mother) for the measure of child adjustment. This was done in order to limit the number of variables due to the small sample size. Information about adjustment is being collected from subjects' teachers and will be analyzed as part of a future study.

The wide age range of subjects studied (4.5-12.3) should also be considered. Results of this study may have differed if the developmental stage of subjects had been taken into account. For example, it may be that when a child is younger he/she may feel close to his/her sibling only if they can communicate clearly with one another, but when the child matures communication may no longer be an important factor for closeness. This idea could have been studied by narrowing the age range of subjects, which was deemed undesirable since it would have reduced the sample size considerably. Grouping subjects into smaller age ranges (e.g., 5-7, 8-10, 10-12) and comparing results between groups could have been another possible means towards investigating questions concerning changes across developmental stages, but with the small sample size this

procedure was not feasible.

Results from this study support previous findings suggesting no difference between the adjustment of disabled and nondisabled children, and siblings of disabled and nondisabled children. This study was the first to assess perceptions of children in a disabled/nondisabled sibling relationship. Generally, conclusions from this study indicate that effective communication between a hearing-impaired child and his/her sibling is related to the sibling's perceptions of warmth in their relationship (positive correlation) and to that sibling's adjustment (i.e., externalizing behavior; negative correlation).

Future studies investigating the role of the sibling relationship in childhood adjustment of hearing-impaired children and their brothers and sisters should improve upon the limitations cited above. One way to accomplish this might be to conduct a state-wide or possibly a nation-wide investigation so that a large, representative sample may be recruited. A larger sample would increase generalizability, would permit analysis of data from multiple informants (while maintaining sufficient power), and would allow for the implementation of strict inclusion criteria (e.g., including only younger siblings of hearing-impaired children, limited age range).

## APPENDIX A

## MODIFIED SIBLING RELATIONSHIP QUESTIONNAIRE

## PRACTICE QUESTIONS

HOW MUCH DOES THE COOKIES MONSTER LIKE COOKIES?

- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ **EXTREMELY MUCH**

TELL ME SOMETHING THAT YOU REALLY LIKE TO DO. (e.g.,  
RIDE YOUR BIKE, WATCH T.V.) OKAY, THEN HOW MUCH  
DO YOU REALLY LIKE TO \_\_\_\_\_?

- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ **VERY MUCH**  
☐ **EXTREMELY MUCH**

HOW MUCH DO YOU EAT DOG FOOD?

- ☐ **HARDLY AT ALL**  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

- 
- \*1. Some brothers and sisters do nice things for each other a lot, while other brothers and sisters do nice things for each other a little. How much do both you and \_\_\_\_\_ do nice things for each other?
- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much
- 

## PRACTICE QUESTIONS

JOHN'S COACH LETS HIM BAT 20 TIMES EVERY GAME,  
BUT THE COACH ALMOST NEVER LETS SUSIE BAT. WHO

DOES THE COACH USUALLY FAVOR, JOHN OR SUSIE?

☐ **JOHN ALMOST ALWAYS IS FAVORED**

☐ John is often favored

☐ Neither John nor Susie is favored

☐ Susie is often favored

☐ Susie almost always is favored

THE TEACHER HELPS SUSIE 10 TIMES A DAY BUT ONLY HELPS JOHN ONCE A DAY. WHO USUALLY GETS MORE ATTENTION FROM THE TEACHER, JOHN OR SUSIE?

☐ John almost always gets more attention

☐ John often gets more attention

☐ They get about the same amount of attention

☐ Susie often gets more attention

☐ **SUSIE ALMOST ALWAYS GETS MORE ATTENTION**

USUALLY I FEED MY DOG BEFORE I FEED MY FISH. BUT ONCE IN A WHILE I FEED MY FISH FIRST. WHO USUALLY GETS TREATED BETTER, MY DOG OR MY FISH?

☐ My dog almost always gets treated better

☐ **MY DOG OFTEN GETS TREATED BETTER**

☐ They get treated about the same

☐ My fish often gets treated better

☐ My fish almost always gets treated better

2. Who usually gets treated better by your mother,  
you or \_\_\_\_\_?

☐ My sibling almost  
always gets treated  
better

☐ My sibling often is  
treated better

☐ We are treated about the  
same

☐ I often get treated better

☐ I almost always get  
treated better

**PRACTICE**

HOW MUCH DO YOU EAT ICE CREAM?

- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

3. How much do you show \_\_\_\_\_ how to do things he/she doesn't know how to do? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

4. How much does \_\_\_\_\_ show you how to do things that you don't know how to do? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

5. How much do you tell \_\_\_\_\_ what to do? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

6. How much does \_\_\_\_\_ tell you what to do? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

**PRACTICE**

THE TEACHER YELLS AT SUSIE ALL THE TIME  
 BUT THE TEACHER NEVER YELLS AT JOHN. WHO  
 USUALLY GETS TREATED BETTER BY THE TEACHER,  
 SUSIE OR JOHN?

- ☐ JOHN ALMOST ALWAYS GETS TREATED BETTER  
☐ John often gets treated better

- ☐ They get treated about the same  
☐ Susie often gets treated better  
☐ Susie almost always gets treated better

7. Who usually gets treated better by your father,  
 you or \_\_\_\_\_?

- ☐ My sibling almost  
 always gets  
 treated better  
☐ My sibling often  
 is treated better  
☐ We are treated  
 about the same  
☐ I often get treated  
 better  
☐ I almost always  
 get treated better

\*8. Some brothers and sisters care about each other a lot,  
 while other brothers and sister don't care about each other  
 that much. How much do both you and \_\_\_\_\_ care  
 about each other?

- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

\*9. How much do you and \_\_\_\_\_ go places and do  
 things together?

- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

10. How much do you and \_\_\_\_\_ insult and call each other  
 names?

- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

\*11. How much do you and \_\_\_\_\_ like the same  
 things?

- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

---

\*12. How much do you and \_\_\_\_\_ tell each other everything? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

---

13. Some brothers and sisters try to out-do or beat each other at things a lot, while other brothers and sisters try to out-do or beat each other a little. How much do you and \_\_\_\_\_ try to out-do or beat each other at things? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

---

\*14. How much do you admire (think well of) and respect \_\_\_\_\_? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

---

\*15. How much does \_\_\_\_\_ admire (think well of) and respect you? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

---

16. How much do you and \_\_\_\_\_ disagree and quarrel (fight & argue) with each other? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

---

\*17. Some brothers and sisters cooperate (work well with each other) a lot, while other brothers and sisters cooperate (work well with each other) a little. How much do you and \_\_\_\_\_ cooperate (work well with each other)? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much--

---

18. Who gets more attention from your mother, you or \_\_\_\_\_? ☐ My sibling almost always gets more attention



- ☐ My sibling often gets more attention
- ☐ We get about the same amount of attention
- ☐ I often get more attention
- ☐ I almost always get more attention

19. How much do you help \_\_\_\_\_ with things that he/she can't do by him/herself?

- ☐ Hardly at all
- ☐ Not too much
- ☐ Somewhat
- ☐ Very much
- ☐ Extremely much

20. How much does \_\_\_\_\_ help you with things that you can't do yourself?

- ☐ Hardly at all
- ☐ Not too much
- ☐ Somewhat
- ☐ Very much
- ☐ Extremely much

21. How much do you make \_\_\_\_\_ do things?

- ☐ Hardly at all
- ☐ Not too much
- ☐ Somewhat
- ☐ Very much
- ☐ Extremely much

22. How much does \_\_\_\_\_ make you do things?

- ☐ Hardly at all
- ☐ Not too much
- ☐ Somewhat
- ☐ Very much
- ☐ Extremely much

23. Who gets more attention from your father, you or \_\_\_\_\_?

- ☐ My sibling almost always gets more attention
- ☐ My sibling often gets more attention
- ☐ We get about the

same amount of  
attention

☐ I often get more  
attention

☐ I almost always  
get more attention

\*24. How much do you and \_\_\_\_\_ love each other?

☐ Hardly at all

☐ Not too much

☐ Somewhat

☐ Very much

☐ Extremely much

\*25. Some brothers and sister play around and have fun with each other a lot, while other brothers and sisters play around and have fun with each other a little. How much do you and \_\_\_\_\_ play around and have fun with each other?

☐ Hardly at all

☐ Not too much

☐ Somewhat

☐ Very much

☐ Extremely much

26. How much are you and \_\_\_\_\_ mean to each other?

☐ Hardly at all

☐ Not too much

☐ Somewhat

☐ Very much

☐ Extremely much

\*27. How much do you and \_\_\_\_\_ have in common (like to do the same things)?

☐ Hardly at all

☐ Not too much

☐ Somewhat

☐ Very much

☐ Extremely much

\*28. How much do you and \_\_\_\_\_ share secrets and private feelings?

☐ Hardly at all

☐ Not too much

☐ Somewhat

☐ Very much

☐ Extremely much

29. How much do you and \_\_\_\_\_ compete with each other?

☐ Hardly at all

☐ Not too much

☐ Somewhat

☐ Very much  
☐ Extremely much

---

\*30. How much do you look up to and feel proud of \_\_\_\_\_? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

---

\*31. How much does \_\_\_\_\_ look up to and feel proud of you? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

---

32. How much do you and \_\_\_\_\_ get mad at and get in arguments (yelling fights) with each other? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

---

33. How much do both you and \_\_\_\_\_ share with each other? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

---

34. Who does your mother usually favor, you or \_\_\_\_\_? ☐ My sibling almost always is favored  
☐ My sibling often is favored  
☐ Neither of us is favored  
☐ I am often favored  
☐ I am almost always favored

---

35. How much do you teach \_\_\_\_\_ things that he/she doesn't know? ☐ Hardly at all  
☐ Not too much  
☐ Somewhat

- ☐ Very much  
☐ Extremely much

36. How much does \_\_\_\_\_ teach you things that you don't know?

- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

37. How much do you order \_\_\_\_\_ around?

- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

38. How much does \_\_\_\_\_ order you around?

- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

39. Who does your father usually favor, you or \_\_\_\_\_?

- ☐ My sibling almost always is favored  
☐ My sibling often is favored  
☐ Neither of us is favored  
☐ I am often favored  
☐ I am almost always favored

40. How much is there a strong feeling of affection (love) between you and \_\_\_\_\_?

- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

41. Some kids spend lots of time with their brothers and sisters, while others don't spend so much. How much free time do you and \_\_\_\_\_ spend together?

- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat

☐ Very much  
☐ Extremely much

42. How much do you and \_\_\_\_\_ bug and pick on each other in mean ways?
- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

43. How much are you and \_\_\_\_\_ alike?
- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

44. How much do you and \_\_\_\_\_ tell each other things that you don't want other people to know?
- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

45. How much do you and \_\_\_\_\_ try to do things better than each other?
- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

46. How much do you think highly (really well) of \_\_\_\_\_?
- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

47. How much does \_\_\_\_\_ think highly (really well) of you?
- ☐ Hardly at all  
☐ Not too much  
☐ Somewhat  
☐ Very much  
☐ Extremely much

48. How much do you and \_\_\_\_\_ argue with each other?
- ☐ Hardly at all

- ☐ Not too much
- ☐ Somewhat
- ☐ Very much
- ☐ Extremely much

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## VITA

Karen Lynn Burk, daughter of Phyllis and Melvyn Burk, was born in Cleveland, Ohio, on May 12, 1969. Ms. Burk graduated in the top 10% of her class from Beachwood High School in 1987, and received a scholarship for her achievement from the Parents and Teachers Association.

Ms. Burk received a Bachelor of Arts degree in Psychology and Speech and Hearing from Indiana University in May 1991. She graduated Phi Beta Kappa, with honors in Speech and Hearing, and with high distinction. Ms. Burk was a member of Mortar Board, and received two scholarships from the Panhellenic Association awarded to the "Outstanding Woman of the Year."

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The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

4/12/94  
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